



# Best Practices for Large Trucks in Work Zones



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# Topics

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- Overview of FHWA's Work Zone Management Program
- Best Practices
- Smarter Work Zones Initiative (EDC-3)
- Resources





# FHWA's Work Zone Management Program

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- Goal to “make work zones work better”
- High quality products, tools & information
- Planning, designing and implementing safer work and less congested work zones
- Constructability

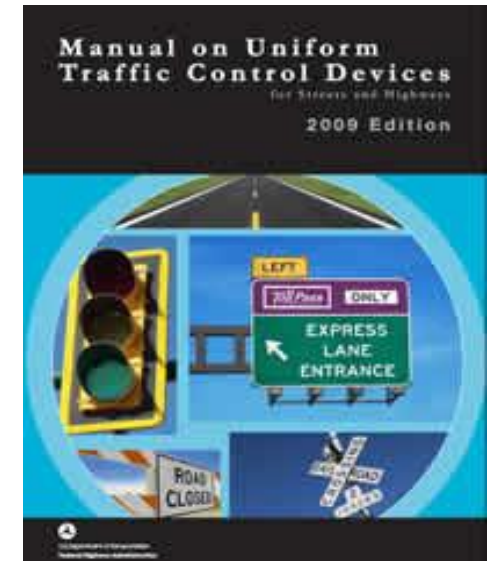
Work Zones that integrate:  
safety, mobility and constructability





# Key Work Zones Regulations

- Work Zone Safety and Mobility Rule (23 CFR 630 Subpart J)
- Temporary Traffic Control Devices Rule (23 CFR 630 Subpart K)
- Manual on Uniform Traffic Control Devices (MUTCD)
  - Including high-visibility apparel
    - <http://mutcd.fhwa.dot.gov/>
- Crashworthiness of WZ TTC Devices
  - NCHRP 350 and MASH
    - <http://safety.fhwa.dot.gov/>





# Best Practices for Large Trucks







# WZ Truck Safety Issues

Trucks are over-represented in work zone fatal crashes

- Slower response to changes in traffic conditions
- General visibility
- Unpredictable behavior of surrounding drivers
- Physics



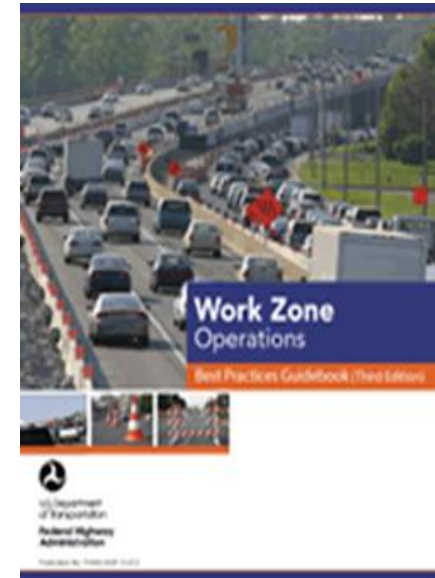
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# Project Development Process

- Project Planning
  - Scoping
- Preliminary Engineering (DBB and DB)
- Final Design
  - Transportation Management Plan (TMP)
  - Plans, Specifications & Estimates (PS&E)
- Contract/Construction
- Post Construction





# Best Practices

- National or State approved MUTCD
- MASH or NCHRP 350 approved hardware
- Shoulder/Lane use
- Detours
- Truck/heavy vehicle restrictions
- ITS Technologies



W11-V4



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# Additional TCDs



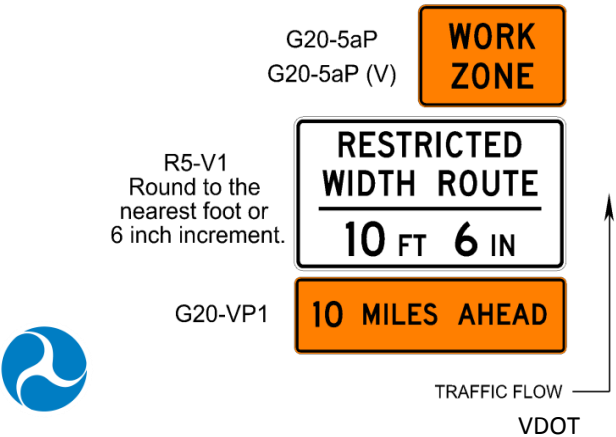
FHWA/ATSSA-WZ Safety Grant products



FHWA/ATSSA-WZ Safety Grant products



FHWA/ATSSA-WZ Safety Grant products



G20-V1

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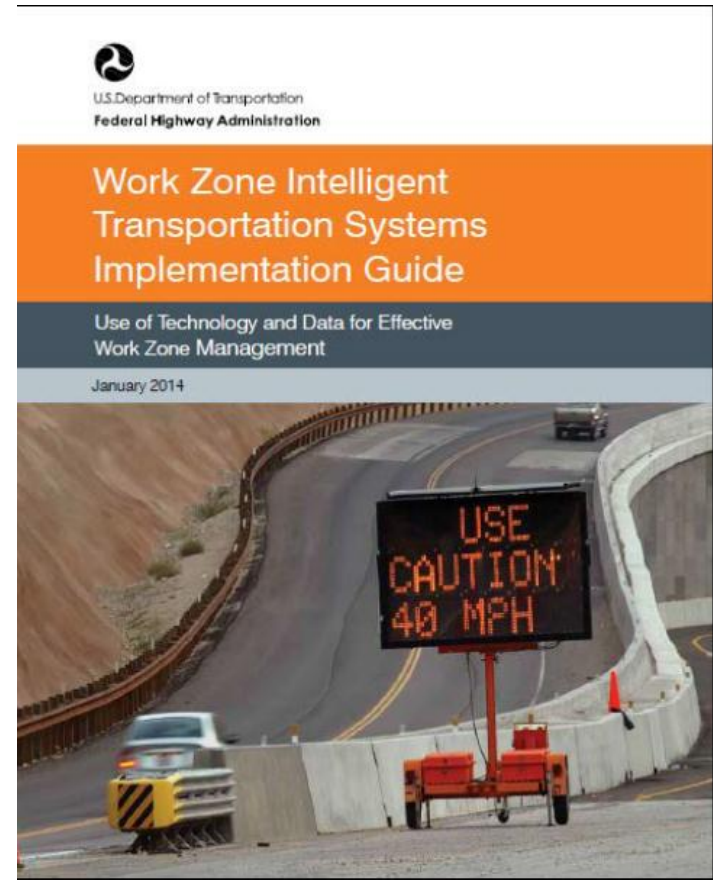
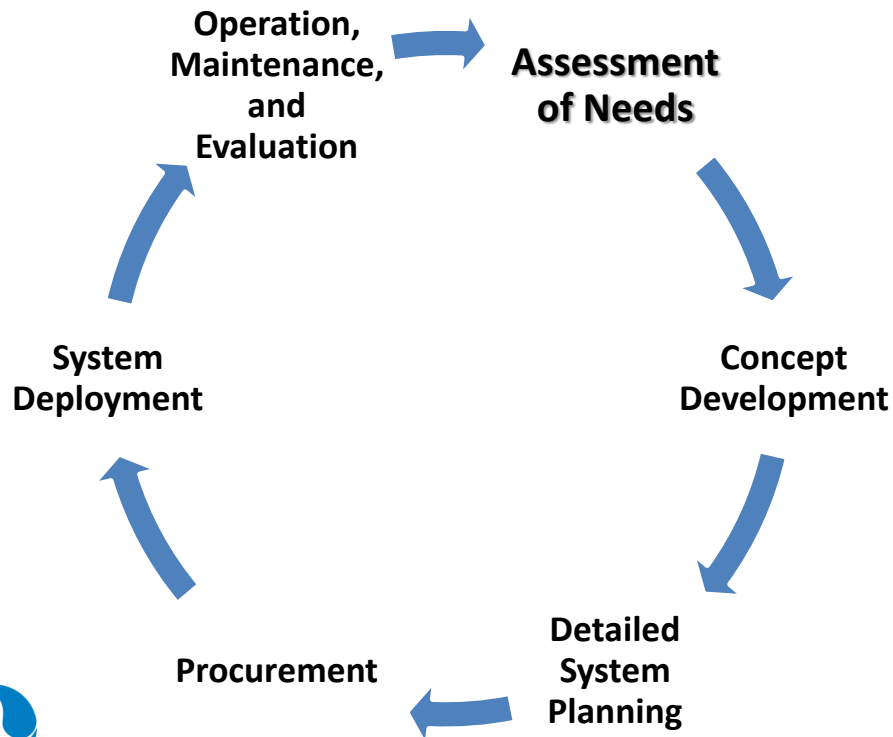
Class 3 Ensemble

FHWA/ATSSA-WZ Safety Grant products



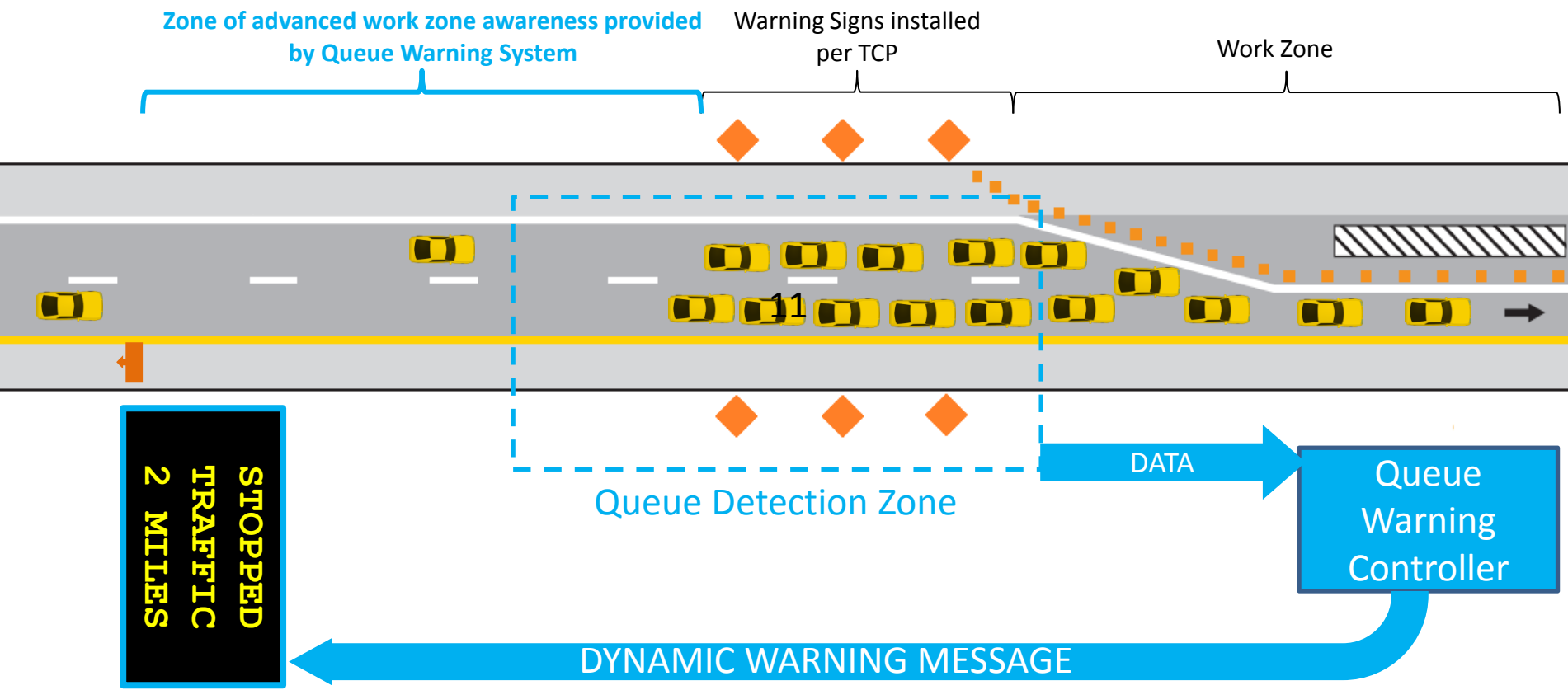
# Work Zone ITS Implementation Guide

Promotes a structured approach to WZ ITS implementation





# Queue Warning Systems (QWS)



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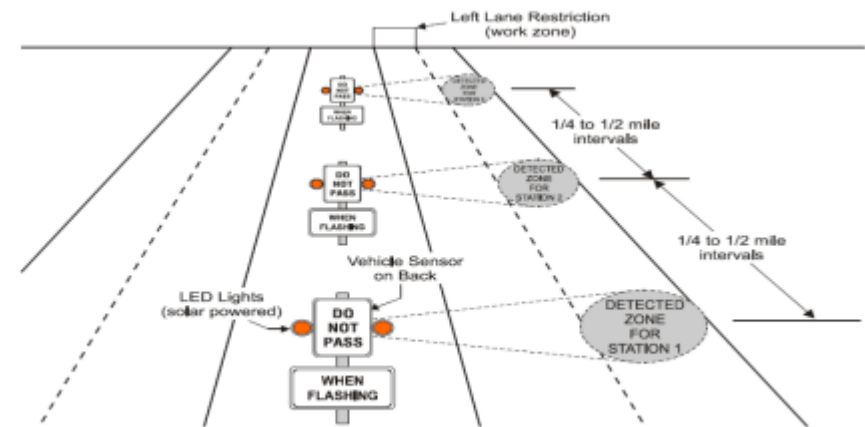






# Dynamic Lane Merge

- **Early merge:**  
In low-volume conditions reduces the occurrence of high-speed merging at the point of lane closure.
- **Late merge:**  
In high-volume conditions reduces the length of the queue.



- Indiana Lane Merge System (Source: Beacher et al., 2004)







# I-81 SB Pavement Reclamation Work Zone Area

- TMP was developed
  - TTCP
    - Trucks stayed on I-81
    - Passenger vehicles were detoured
    - Flaggers (24 hrs.)
    - Law enforcement
  - Traffic Operations
    - CB Wizards
    - Advance warning signs (PCMS)
    - On site-tow truck
    - Additional Cameras (TMC)
  - Public Outreach
    - VA Truckers Association
    - Weekly media briefings
    - Meetings with emergency responders



Overview of right-lane closure showing trucks continuing on I-81 while passenger vehicles were detoured onto U.S. 11. (Photo by Brian K. Diefenderfer, VCTIR)





# CMV benefits

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- **Information prescience** – tell drivers what they need to know when they need to know it
- **Improved routing / scheduling** – avoid WZ-related congestion, loss of hours-of-service in delay
- **Reduction of inter-vehicle conflicts** – through active management of vehicle interactions in work zone queues, merge points, etc.





# Every Day Counts-3 Initiatives:

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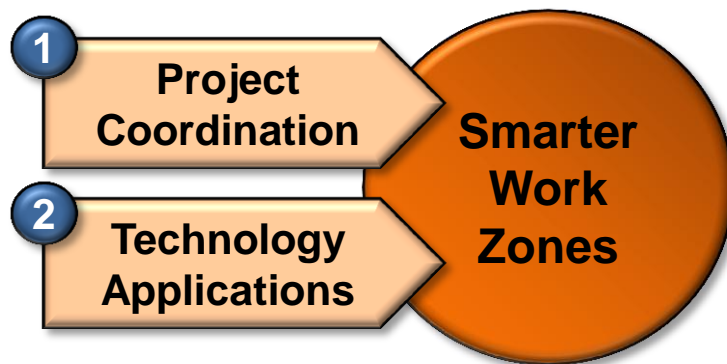
## Smarter Work Zones





# What is the “Smarter Work Zones” Initiative?

- Strategies to enhance work zone traffic operations management and improve safety
- 2-pronged approach



## SWZ Goals

1. Minimize travel delays
2. Ensure safety of motorists and workers
3. Maintain business and resident access
4. Ensure timely completion of construction projects







# What are the Benefits of Smarter Work Zones?

- **Project Coordination**

- Reduced numbers of street cuts
- Earlier identification of project impacts
- Increased ability to reduce/ manage traffic disruptions from road work
- Better quality road surfaces
- Increases in customer satisfaction

- **Technology Applications**

- Improved safety to motorists and workers
- Mitigation of work zone-related congestion

Benefits increase in  
high-impact areas  
and during special  
events





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# Resources





# FHWA Work Zone Management Website

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- Best Practices:
  - <http://www.ops.fhwa.dot.gov/wz/practices/best/bestpractices.htm>
- ITS & Technology:
  - <http://www.ops.fhwa.dot.gov/Wz/its/index.htm>
- WZ Best Practices Factsheet 10:
  - <http://www.ops.fhwa.dot.gov/wz/practices/factsheets/factsheet10.htm>
- WZ and Trucks Brochure:
  - <http://www.ops.fhwa.dot.gov/wz/publicinfostrategies/programlevel.htm#fhw>
- Design Build:
  - <http://www.ops.fhwa.dot.gov/wz/resources/designbuild.htm>
- Transportation Management Plans:
  - [http://www.ops.fhwa.dot.gov/wz/resources/final\\_rule/tmp\\_examples.htm](http://www.ops.fhwa.dot.gov/wz/resources/final_rule/tmp_examples.htm)





# National Work Zone Clearinghouse Website

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## ➤ WZ Safety Grants Products

- Guidelines on Work Zone Access and Egress
- Shadow Vehicles for Work Zones Training Module
- OSHA 10-Hour Training for Roadway Construction
- Truck Traffic and WZ Management (coming soon)

➤ <http://www.workzonesafety.org/>







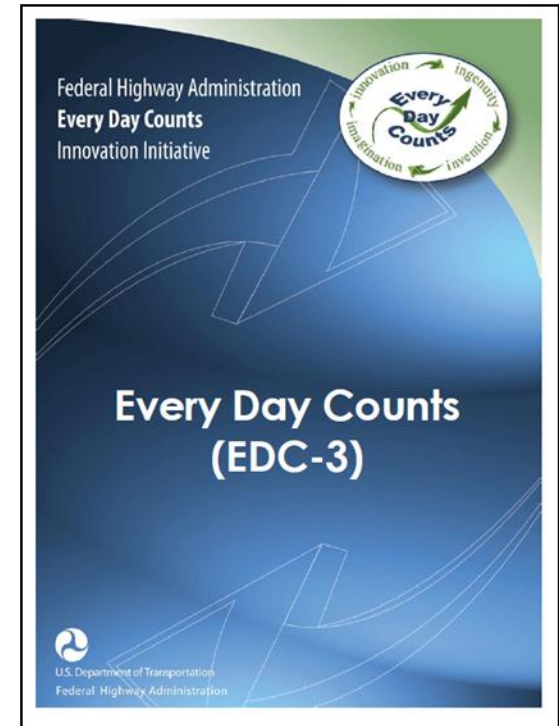
# For Additional EDC Information:

## ➤ FHWA Every Day Counts Website:

- <http://www.fhwa.dot.gov/everydaycounts/>
- FHWA Every Day Counts Innovation Initiative “EDC-3 Report”

## ➤ FHWA Work Zone Mobility and Safety Program Website:

- <http://ops.fhwa.dot.gov/wz/index.asp>





**Save the Date!**

## **National Symposium on Work Zones and Large Trucks**

- To be held in conjunction with the Commercial Vehicle Safety Alliance (CVSA) 2015 Annual Meeting
  - April 13, 2015
  - Jacksonville, FL





# Contact Information

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FHWA WZ Management Website:

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